

Mr. Yogesh Patel, Chief Engineer
West Virginia Department of Environmental Protection
Division of Water and Waste Management
601 57th Street, S.E.
Charleston, West Virginia 25304

ARCADIS
One Adams Place
310 Seven Fields Blvd
Suite 210
Seven Fields
Pennsylvania 16046
Tel 724.742.9180
Fax 724.742.9189
www.arcadis-us.com

Subject:
Request for Temporary Authorization to Discharge Treated Water
Sediment Remediation Project
Koppers Coal Tar Plant
Follansbee, West Virginia

Date:
April 26, 2011

Dear Mr. Patel:

On behalf of Beazer East, Inc. (Beazer), ARCADIS respectfully submits, to the West Virginia Department of Environmental Protection (WVDEP), this Request for Temporary Authorization to Discharge for the above referenced sediment remediation project at the Koppers Coal Tar Plant in Follansbee, West Virginia (Koppers Site) (**Figure 1**). The project is being performed in conjunction with the United States Environmental Protection Agency's (USEPA's) March 2011 *Final Decision and Response to Comments, Koppers Inc., Follansbee, West Virginia*. The work will also be performed in compliance with dredging permits that we expect to receive from the United States Army Corps of Engineers (Nationwide Permit #38 Authorization) and the WVDEP (West Virginia State 401 Water Quality Certification) within the next few weeks.

Contact:
Mark B. Hanish

Phone:
724.742.9180, ext. 518

Email:
mark.hanish@arcadis-us.com

Our ref:
B0039227.0000.00002

Background and Remedial Action Overview

A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was completed for the Koppers Site after numerous phases of investigation over the past decades. Based on the RFI, it was determined that sediments in the Ohio River adjacent to the Koppers Site contain elevated concentrations of polycyclic aromatic hydrocarbons (PAHs) and tarry material. The size of the area with impacted sediments is approximately 1,000-foot long and extends approximately 225 feet outward from the shoreline. Typically, PAH concentrations are highest in the surface and shallow sediments and tend to decrease with depth. Nearly all historical surface water samples collected from the Ohio River in the vicinity of the Koppers Site contained no detectable PAH concentrations.

After USEPA approval of the RFI, a Corrective Measures Study (CMS) was performed to evaluate remedial alternatives for soil, groundwater and sediment. In August 2009, the USEPA approved the CMS which identified a combined

Imagine the result

dredging/capping scenario as the selected alternative for remediation of the impacted sediments in the Ohio River adjacent to the Koppers Site. In September 2010, USEPA issued a Statement of Basis (SB), which included a Public Notice and Comment period. The SB reiterated, among other things, that a combination dredging/capping scenario represented the preferred and selected remedy to address impacted sediments.

Based on the above, approximately 32,000 cubic yards (CY) of sediment containing the highest concentrations of PAHs will be removed over an area encompassing approximately 4.7 acres. (Note: The sediment removal volume was increased from 16,000 CY in the CMS to 32,000 CY to accommodate final design factors for placement of the cap.) The cap will be placed over the sediment surface to isolate the material remaining in the dredged area and to return the sediment surface to approximate pre-dredge elevations.

Constituents of Interest in Sediment Dredge Material

The sediment remediation project will remove impacted sediment to a depth of approximately four feet from the bottom of the river, which will allow for the installation of a cap consisting of a reactive core mat (RCM) and armor stone. Sediment quality data has been generated during several phases of investigation for PAHs, the primary constituents of interest. A summary of analytical data for PAHs, other semivolatile organic compounds and metals concentrations in sediment is provided in **Table 1** and in surface water is provide in **Table 2**. More recently, waste disposal characterization was performed to obtain pre-approval from local landfills to accept the dewatered sediment (**Table 3**). Samples were collected from three representative locations from within the footprint of the proposed area of dredging. This data is believed to be representative of the sediment and water that will be encountered during dredging.

Location and Description of Dredging and Material Handling Sites

The project dredging location is located within the Ohio River at approximately River Mile 69.4 adjacent to the 34-acre Koppers Site, which is located in an industrialized area in the northern panhandle of West Virginia along the east embankment of the Ohio River in Brooke County, just north of the City of Follansbee, West Virginia (**Figure 1**). The Material Handling Site is also located within the Ohio River, at approximately River Mile 74.7, in Brooke County, just south of the City of Wellsburg, West Virginia, within the Buffalo District (**Figure 1 and 2**). The property is located adjacent to and immediately south of Buffalo Creek and between West Virginia State Route 2 and the Ohio River. The 5.46 acre property, owned by C&C Marine Maintenance Company, is a relatively flat and open property. The amount of land within this property parcel is approximately 4.15 acres.

Summary of Dredging Operations

Dredging will be performed in accordance with the 401 WQC and the NWP38. The dredge area will be surrounded with oil booms and siltation curtains as required. The sediments will be removed from the river bottom using a barge-mounted excavator fitted with a specialty sediment dredging bucket. Dredge materials will be placed in containment or “hopper” barges staged at the dredge location. After each containment barge is filled, the barge will be transported down river to the Material Handling Site.

Summary of Material Handling and Water Treatment Operations

From the time that the sediment is placed into the hopper barge and it is transported to the Material Handling Site, pore water will have had time to drain from the sediment to the bottom of the barge. Upon arrival at the Material Handling Site, the sediments will be transferred by land-based excavator or crane to the engineered sediment dewatering pad (**Figures 2 and 3**). The sediment dewatering pad (schematic provided in **Figure 3**) will be a multilayered system constructed of a leveled stone base, a high-density polyethylene liner, a non-woven geotextile fabric and an asphalt working surface. Concrete blocks will be installed around the perimeter of the pad and within the interior of the pad to contain and compartmentalize individual sediment stockpiles. The working surface and liner will be engineered to allow drainage to a sump so that any rain water or drainage water can be collected and pumped from the sediment dewatering pad to the treatment system.

Upon placement of the sediments on the sediment dewatering pad, these sediments may further drain on the pad during handling (**Figures 2 and 3**) and will be amended, as necessary, with Portland cement or other drying agent to further reduce the free liquid content so that the materials can be transported via truck to the selected and approved landfill.

Water that drains to the bottom of the hopper barge and drains to the sump within the sediment dewatering pad will be pumped to one of three separator tanks to undergo the first stage of treatment via separation and settling (**Figures 2 and 4**). Water from these tanks will then be pumped through 5 µm bag filters to remove fine particulates before passing through two 8-foot diameter vessels containing granular activated carbon (GAC), which will remove dissolved organic constituents. Treated water will be pumped to an effluent water tank from which discharge monitoring can be performed prior to discharge. Upon meeting conditions of the temporary discharge authorization, the treated water will be returned to the Ohio River system via discharge to Buffalo Creek (**Figures 2 and 4**). It should be noted that in the vicinity of the Site, the Ohio River is classified as a Tier 2 surface water body with Tier 1

classifications for iron, fecal coliform bacteria and dioxin exceedances of surface water standards (West Virginia 2008 Integrated Water Quality Monitoring and Report)

The following summarizes the anticipated water treatment discharge conditions.

- Estimated Maximum Duration of Water Treatment Project: 4-6 months
- Anticipated Period of Water Treatment – July through November, 2011
- Flow Rate, Average: 125 gallons/minute (gpm)
- Flow Rate, Maximum Instantaneous: 200 gpm
- Estimated Total Treatment/Discharge Volume: 3,000,000 gallons

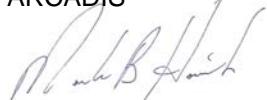
Project Schedule

Implementation of the sediment remediation project is anticipated to begin in May 2011 and continue through year's end. Pre-dredging preparatory activities will be performed in May and June 2011, with sediment dredging to begin in July 2011 in order to avoid higher river flow conditions that could potentially occur in the Spring season. The preparatory steps will include mobilization of personnel and equipment and setup of the sediment handling, dewatering and treatment facilities.

If you have any questions regarding this submittal, please do not hesitate to contact me at 724.742.9180, ext. 518.

Sincerely,

ARCADIS



Mark B. Hanish
Project Manager

Copies:

Mr. Don Martin, WVDEP
Mr. Andrew Fan, USEPA
Mr. Kurt Paschl, Beazer
Ms. Linda Paul, Koppers, Inc.
Mr. Alan Fowler, ARCADIS
Mr. Mark Gravelding, ARCADIS

TABLE 1
Sediment Analytical Results
December 2000 Ohio River Sampling
Near the Koppers Follansbee, West Virginia Coal Tar Plant

Sample Location: Laboratory ID: Date Sampled:	SD-01-01 COL120212003 12/9/2000	SD-02-01 COL120212002 12/9/2000	SD-02-12 COL120212026 #####	SD-02-24 COL120212027 #####	SD-03-01 COL090119024 12/8/2000	SD-04-01 COL090119021 12/8/2000	SD-04-12 COL120212023 12/10/2000	SD-04-24 COL120212024 12/10/2000	SD-05-01 COL090119020 12/8/2000	SD-06-01 COL090119016 12/8/2000	SD-07-01 COL090119015 12/8/2000	SD-08-01 COL090119008 12/7/2000	
PAHs													
Acenaphthene	ug/kg	28	23 J	25000	1400 UJ	5600	140 J	5500	310 J	640	82 J	240000	820 J
Acenaphthylene	ug/kg	410	25 U	25000	1500 UJ	650	150 J	1400	340 J	450	90 J	33000	910 J
Anthracene	ug/kg	56	13 J	25000	760 UJ	1900	75 J	3100	170 J	680	46 J	230000	460 J
Benz(a)anthracene	ug/kg	210	6.7 J	790	400 J	3000	40 J	6900	92 J	2100	24	160000	240 J
Benz(a)pyrene	ug/kg	230	6.3 J	790	380 J	2700	37 J	6100	86 J	2200	23	120000	230 J
Benz(b)fluoranthene	ug/kg	180	8.1 J	650	490 J	2100	48 J	4600	110 J	1600	29	86000	290 J
Benz(ghi)perylene	ug/kg	100	7.3 J	25000	440 UJ	1100	43 J	2400	100 J	1300	26 J	34000	260 J
Benz(k)fluoranthene	ug/kg	260	10 J	830	600 J	2500	60 J	6100	140 J	2000	36	67000	360 J
Chrysene	ug/kg	220	7.2 J	810	440 J	3100	43 J	6500	99 J	2000	26	140000	260 J
Dibenz(a,h)anthracene	ug/kg	32	8.9 J	25000	540 UJ	340	53 J	840	120 J	370	32 J	15000	320 J
Fluoranthene	ug/kg	400	8.7 J	1700	530 J	7400	52 J	15000	120 J	4900	32	460000	320 J
Fluorene	ug/kg	410	22 U	25000	1300 UJ	2800	130 J	1200	300 J	400	80 J	250000	810 J
Indeno(1,2,3-cd)pyrene	ug/kg	130	6.3 J	25000	380 UJ	1300	37 J	3100	86 J	1300	23 J	49000	230 J
Naphthalene	ug/kg	46	25 J	49000	1500 J	54000	150 J	83000	340 J	680	90 J	270000	900 J
Phenanthrene	ug/kg	140	15 J	1700	870 J	4200	87 J	8500	200 J	2100	53	710000	530 J
Pyrene	ug/kg	330	7 J	1100	420 J	4900	42 J	9900	96 J	3500	25	320000	250 J
TOTAL PAHs	ug/kg	2,362		57,370		97,590		164,140		26,220		3,184,000	
		2%		85%		55%		51%		3%		16,066,000	
												23,484,000	
												117,870	
												733,300	
												9,300	
												1%	
												72,620	
Other SVOCs													
2,4-Dimethylphenol	ug/kg	410	42 U	81000	2500 J	68000	250 J	120000	570 J	240	150 J	25000	1500 J
2-Methylnaphthalene	ug/kg	410	28 U	4100	1700 J	5000	170 J	16000	380 J	650	100 J	54000	1000 J
2-Methylphenol	ug/kg	410	20 U	5100	1200 J	33000	120 J	130000	280 J	1500	73 U	15000	730 UJ
4-Chloroaniline	ug/kg	410	16 U	25000	990 UJ	2500	98 UJ	5700	220 UJ	1500	59 U	15000	590 UJ
4-Methylphenol	ug/kg	410	42 U	71000	2500 J	110000	250 J	370000	580 J	1500	150 U	15000	1500 UJ
bis(2-Ethylhexyl) phthalate	ug/kg	410	7.4 U	25000	440 UJ	1300	44 B	5700	100 UJ	90	27 B	8000	270 J
Carbazole	ug/kg	15	8.4 J	25000	510 UJ	500	50 UJ	370	120 J	100	31 J	53000	310 J
Dibenzofuran	ug/kg	410	18 U	25000	1100 UJ	1500	100 J	440	240 J	280	63 J	170000	630 J
Di-n-octyl phthalate	ug/kg	410	8.6 U	25000	520 UJ	55	51 J	5700	120 UJ	1500	31 U	15000	310 UJ
Phenol	ug/kg	410	27 U	4100	1600 UJ	54000	160 J	220000	370 J	1500	99 U	15000	990 UJ
VOCs													
Benzene	ug/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Ethylbenzene	ug/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Methylene chloride	ug/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Toluene	ug/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Xylenes (total)	ug/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Inorganics													
Aluminum	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Antimony	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Arsenic	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Barium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Beryllium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Cadmium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Calcium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Chromium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Cobalt	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Copper	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Iron	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Lead	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Magnesium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Manganese	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Mercury	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Nickel	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Potassium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Selenium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Silver	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Sodium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Thallium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Vanadium	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Zinc	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Cyanide, Total	mg/kg	n/a		n/a		n/a		n/a		n/a		n/a	
Wet Chemistry													
pH	No Units	7.2		7.6</									

TABLE 1
Sediment Analytical Results
December 2000 Ohio River Sampling
Near the Koppers Follansbee, West Virginia Coal Tar Plant

Sample Location: Laboratory ID: Date Sampled:	SD-09-01 COL090119006 12/7/2000	SD-09-12 COL120212019 12/10/2000	SD-09-24 COL120212020 12/10/2000	SD-10-01 COL090119004 12/7/2000	SD-11-01 COL090119002 12/7/2000	SD-12-01 COL080229011 12/6/2000	SD-12-12 / SD-DUP-01 * COL120212015 12/10/2000	SD-12-24 COL120212016 12/10/2000	SD-13-01 COL080229009 12/6/2000	SD-14-01 COL080229006 12/6/2000	SD-14-12 COL120212013 12/10/2000	SD-14-24 COL120212014 12/10/2000													
	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL											
PAHs																									
Acenaphthene	ug/kg	130	63 J	770	140 J	1200	71 J	3200	55 J	1400	110 J	750	25	190	27 J	1300	44	930	120 J	88	26 J	95	26 J		
Acenaphthylene	ug/kg	170	70 J	830	150 J	490	78 J	400	61 J	1300	120 J	220	120 J	465	28 U	480	29 U	190	49 J	180	130 J	48	29 J		
Anthracene	ug/kg	280	35 J	2000	75 J	1600	39	1200	31 J	4900	62	2600	61	140	14 J	60	15 J	1900	25	1600	66 J	130	15 J		
Benzo(a)anthracene	ug/kg	700	19 J	4600	40	3400	21	1600	16 J	9500	33	4500	32	455	7.5 J	180	7.9 J	4100	13	5800	35	480	7.8		
Benzo(a)pyrene	ug/kg	670	17 J	4400	37	3700	19	1500	15 J	11000	31	5000	30	535	7 J	200	7.3 J	4100	12	6600	33	500	7.3		
Benzo(b)fluoranthene	ug/kg	710	23 J	3200	48	4000	25	1400	20 J	10000	40	4400	39	410	9.1 J	140	9.5 J	4000	16	5500	43	390	9.4 J		
Benzo(ghi)perylene	ug/kg	210	20 J	2500	43	1300	23	480	18 J	4000	36	2100	35	310	8.1 J	160	8.5 J	1800	14	4400	38	260	8.4 J		
Benzo(k)fluoranthene	ug/kg	510	28 J	4000	60	2000	31	1100	24 J	7400	50	3900	49	490	11 J	170	12 J	2700	20	4700	52	470	12 J		
Chrysene	ug/kg	680	20 J	5000	43	3700	23	1600	18 J	9100	36	4300	35	480	8.1 J	180	8.5 J	4000	14	5800	38	500	8.4 J		
Dibenz(a,h)anthracene	ug/kg	1200	25 UJ	710	53 J	540	28 J	130	22 J	1700	44 J	920	43 J	92	9.9 J	42	10 J	840	17	1600	47 J	79	10 J		
Fluoranthene	ug/kg	1500	24 J	9100	52	7900	27	4000	21 J	20000	43 J	7000	42	700	9.8	250	10 J	9400	17 J	8400	46	790	10 J		
Fluorene	ug/kg	140	62 J	1100	130 J	1100	69 J	2000	54 J	1800	110 J	730	110 J	140	25 J	47	26 J	910	43	620	120 J	63	26 J		
Indeno(1,2,3-cd)pyrene	ug/kg	230	17 J	3000	37	1700	19	500	15 J	5300	31	2800	30	355	7 J	160	7.3 J	2300	12	5200	33	300	7.3 J		
Naphthalene	ug/kg	140	69 J	2400	150 J	1600	77	5300	61 J	2200	120	710	120 J	435	28 J	170	29 J	780	49 J	630	130 J	100	29 J		
Phenanthrene	ug/kg	800	40 J	6400	87	5800	45	4600	35 J	10000	72	4400	70	410	16 J	150	17 J	5300	28	4300	76	460	17 J		
Pyrene	ug/kg	830	20 J	6900	42	5200	22	2200	17 J	12000	35	5600	34	610	7.9	250	8.2 J	5800	14	8000	37	650	8.2		
TOTAL PAHs	ug/kg	7,700		56,910		45,230		31,210		111,600		49,930		6,327		2,349		49,420		64,260		5,308		2,599	
		2%		4%		4%		17%		2%		1%		7%		7%		2%		1%		2%		4%	
Other SVOCs																									
2,4-Dimethylphenol	ug/kg	1200	120 U	2500	250 U	1300	130 U	1000	100 U	2000	210 U	2000	200 U	465	47 U	480	49 U	810	82 U	2200	220 U	480	49 U	480	49 U
2-Methylnaphthalene	ug/kg	82	78 J	390	170 J	620	87 J	1700	68 J	630	140 J	270	130 J	80.5	31 J	33	33 J	310	54 J	300	150 J	90	32 J	58	32 J
2-Methylphenol	ug/kg	1200	56 U	120	120 J	1300	63 U	1000	49 U	2000	100 U	2000	98 U	465	23 U	480	24 U	810	40 U	2200	110 U	480	24 U	480	23 U
4-Chloroaniline	ug/kg	1200	46 UJ	2500	98 U	130	51 J	1000	40 UJ	2000	81 U	2000	79 U	465	18 U	480	19 U	810	32 U	2200	86 U	480	19 U	480	19 U
4-Methylphenol	ug/kg	1200	120 U	2500	250 U	300	130 J	1000	100 U	2000	210 U	2000	200 U	465	47 U	480	49 U	810	82 U	2200	220 U	480	49 U	480	49 U
bis(2-Ethylhexyl) phthalate	ug/kg	160	21 J	890	44 B	1300	23 B	160	18 J	180	37 J	190	36 J	263	8.2 U	85	8.7 B	810	14 U	210	39 J	480	8.6 U	75	8.5 B
Carbazole	ug/kg	1200	24 UJ	310	50 J	320	26 J	1000	21 UJ	1400	42 J	920	41 J	50	9.4 J	18	9.9 J	740	17 J	550	44 J	43	9.8 J	20	9.8 J
Dibenzofuran	ug/kg	83	49 J	530	100 J	670	54 J	1100	43 J	1100	87 J	440	85 J	84	20 J	34	21 J	600	34 J	450	92 J	60	20 J	44	20 J
Di-n-octyl phthalate	ug/kg	1200	24 UJ	2500	51 U	1300	27 U	1000	21 UJ	2000	43 U	2000	42 U	465	9.6 U	480	10 U	810	17 U	2200	45 U	480	10 U	480	9.9 U
Phenol	ug/kg	1200	76 U	2500	160 U	1300	85 U	1000	67 U	2000	140 U	2000	130 U	465	31 U	480	32 U	810	53 U	2200	140 U	480	32 U	480	32 U
VOCs																									
Benzene	ug/kg	n/a		n/a		n/a		n/a		7.7	1.7 U														

TABLE 1
Sediment Analytical Results
December 2000 Ohio River Sampling
Near the Koppers Follansbee, West Virginia Coal Tar Plant

Sample Location: Laboratory ID: Date Sampled:	SD-15-01 COL080229003 12/6/2000 SQL	SD-16-01 COL080229001 12/6/2000 SQL	SD-17-01 COL120212004 12/9/2000 SQL	SD-18-01 COL090119025 12/9/2000 SQL	SD-19-01 COL090119022 12/8/2000 SQL	SD-19-12 COL120212025 12/10/2000 SQL	SD-19-24 COL120212032 12/10/2000 SQL	SD-20-01 COL090119017 12/8/2000 SQL	SD-21-01 COL090119013 12/7/2000 SQL	SD-21-12 COL120212021 12/10/2000 SQL	SD-21-24 COL120212022 12/10/2000 SQL												
PAHs																							
Acenaphthene	ug/kg	340	29 J	1000	91 J	200000	3800 J	1200	150 J	1200	130 J	1400000	6700 J	170000	3000 J	790000	17000 J	22000	2000 J	620000	6700 J	1300000	6200 J
Acenaphthylene	ug/kg	58	32 J	320	100 J	18000	4200 J	570	170 J	760	140 J	140000	7300 J	13000	3300 J	630000	19000 UJ	5400	2200 J	17000	7400 J	38000	6900 J
Anthracene	ug/kg	300	16 J	2500	51	170000	2100 J	2000	86 J	710	140 J	450000	3700 J	60000	1600 J	1200000	9600 J	37000	1100 J	410000	3700 J	750000	3500 J
Benz(a)anthracene	ug/kg	1500	8.5	13000	27	120000	1100 J	3700	46	3700	38	150000	2000 J	30000	870 J	880000	5100 J	43000	590 J	140000	2000 J	290000	1800 J
Benz(a)pyrene	ug/kg	1900	7.9	12000	25 J	110000	1000 J	3800	42	3800	35	110000	1800 J	24000	810 J	580000	4700 J	32000	550 J	60000	1800 J	120000	1700 J
Benz(b)fluoranthene	ug/kg	1900	10	10000	33 J	75000	1400 J	3100	55	3100	46	75000	2400 J	17000	1100 J	450000	6200 J	25000	720 J	56000	2400 J	110000	2200 J
Benz(ghi)perylene	ug/kg	500	9.2 J	9000	29	65000	1200 J	1000	49 J	1200	41 J	57000	2100 J	12000	950 J	360000	5500 J	22000	640 J	15000	2100 J	34000	2000 J
Benz(k)fluoranthene	ug/kg	1400	13	6200	40	96000	1700 J	3700	68	3800	57	120000	2900 J	25000	1300 J	460000	7600 J	24000	890 J	66000	3000 J	160000	2700 J
Chrysene	ug/kg	1500	9.2	12000	29 J	110000	1200 J	3800	49	3600	41	140000	2100 J	27000	940 J	770000	5500 J	40000	640 J	200000	2100 J	390000	2000 J
Dibenz(a,h)anthracene	ug/kg	140	11 J	3700	36	16000	1500 J	370	60 J	440	50 J	16000	2600 J	3300	1200 J	630000	6800 UJ	37000	790 UJ	5500	2600 J	13000	2400 J
Fluoranthene	ug/kg	3100	11	17000	35 J	380000	1500 J	7200	59	7300	49	540000	2600 J	91000	1100 J	2200000	6600 J	98000	770 J	490000	2600 J	990000	2400 J
Fluorene	ug/kg	99	28 J	580	89 J	140000	3700 J	1100	150 J	1400	130 J	1000000	6500 J	120000	2900 J	900000	17000 J	23000	2000 J	320000	6500 J	640000	6100 J
Indeno(1,2,3-cd)pyrene	ug/kg	680	7.9	11000	25	71000	1000 J	1400	42 J	1700	35 J	62000	1800 J	13000	810 J	340000	4700 J	19000	550 J	19000	1800 J	41000	1700 J
Naphthalene	ug/kg	99	32 J	300	100 J	380000	4200 J	1200	170 J	2900	140	97000000	7300 J	10000000	3200 J	450000	19000 J	8700	2200 J	9700000	7300 J	18000000	6800 J
Phenanthrene	ug/kg	940	18	9100	58	490000	2400 J	5100	99	4900	82	1400000	4300 J	190000	1900 J	4200000	11000 J	120000	1300 J	780000	4300 J	1800000	4000 J
Pyrene	ug/kg	1700	8.9	16000	28 K	270000	1200 J	4700	48	5000	40	380000	2100 J	68000	910 J	2000000	5300 J	96000	620 J	370000	2100 J	770000	1900 J
TOTAL PAHs	ug/kg	16,156		123,700		2,711,000		43,940		46,700		103,040,000		10,863,300		15,580,000		615,100		13,268,500		25,446,000	
		1%		0%		14%		3%		6%		94%		92%		3%		1%		73%		71%	
Other SVOCs																							
2,4-Dimethylphenol	ug/kg	520	53 U	1700	170 U	69000	7000 UJ	2800	280 U	2300	240 U	610000	12000 UJ	54000	5500 UJ	630000	32000 UJ	37000	3700 UJ	120000	12000 UJ	170000	12000 UJ
2-Methylnaphthalene	ug/kg	44	35 J	210	110 J	77000	4600 J	600	190 J	850	160 J	4900000	8200 J	490000	3600 J	200000	21000 J	2400	2500 J	1100000	8200 J	2400000	7600 J
2-Methylphenol	ug/kg	520	26 U	1700	82 U	69000	3400 UJ	2800	140 U	2300	110 U	610000	6000 UJ	54000	2600 UJ	630000	15000 UJ	37000	1800 UJ	120000	6000 UJ	170000	5600 UJ
4-Chloroaniline	ug/kg	520	21 U	1700	66 U	69000	2700 UJ	2800	110 U	2300	93 U	610000	4800 UJ	54000	2100 UJ	630000	12000 UJ	37000	1500 UJ	120000	4800 UJ	170000	4500 UJ
4-Methylphenol	ug/kg	520	53 U	1700	170 U	69000	7000 UJ	2800	280 U	2300	240 U	610000	12000 UJ	54000	5500 UJ	630000	32000 UJ	37000	3700 UJ	120000	12000 UJ	170000	12000 UJ
bis(2-Ethylhexyl) phthalate	ug/kg	41	9.4 J	1700	30 U	69000	1200 UJ	510	50 J	350	42 J	610000	2200 UJ	54000	960 UJ	630000	5600 UJ	37000	650 UJ	120000	2200 UJ	170000	2000 UJ
Carbazole	ug/kg	150	11 J	810	34 J	45000	1400 J	280	57 J	320	48 J	150000	2500 J	19000	1100 J	360000	6400 J	37000	750 UJ	110000	2500 J	210000	2300 J
Dibenzofuran	ug/kg	69	22 J	460	70 J	96000	2900 J	550	120 J	820	99 J	1300000	5100 J	150000	2300 J	710000	13000 J	4300	1600 J	330000	5200 J	700000	4800 J
Di-n-octyl phthalate	ug/kg	520	11 U	1700	35 U	69000	1400 UJ	2800	58 U	2300	49 U	610000	2500 UJ	54000	1100 UJ	630000	6500 UJ	37000	760 UJ	120000	2500 UJ	170000	2400 UJ
Phenol	ug																						

TABLE 1
Sediment Analytical Results
December 2000 Ohio River Sampling
Near the Koppers Follansbee, West Virginia Coal Tar Plant

Sample Location: Laboratory ID: Date Sampled:	SD-22-01 COL090119007 12/7/2000		SD-23-01 COL090119003 12/7/2000		SD-23-12 COL120212017 12/10/2000		SD-23-24 COL120212018 12/10/2000		SD-24-01 COL090119001 12/7/2000		SD-25-01 / SD-DUP-02 * COL080229010 12/6/2000		SD-26-01 COL080229005 12/6/2000		SD-26-12 COL120212011 12/10/2000		SD-26-24 COL120212012 12/10/2000		SD-27-01 COL080229002 12/6/2000		SD-28-01 COL120212005 12/9/2000		SD-29-01 COL090119023 12/8/2000		
	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL	SQL	MDL			
PAHs																									
Acenaphthene	ug/kg	4000	61 J	370	74 J	85000	1200 J	3200	24	460	65 J	6350	57	540	120 J	1800	52	1100	27	380	140 J	88	22 J	180	22 J
Acenaphthylene	ug/kg	1100	67 J	250	81 J	6500	1300 J	430	26 U	340	72 J	750	63 J	240	130 J	260	57 J	61	29 J	240	160 J	29	24 J	58	24 J
Anthracene	ug/kg	4100	34 J	640	41 J	35000	680 J	400	13 J	630	36 J	23000	32 J	750	67 J	830	29 J	330	15 J	780	78 J	37	12 J	180	12 J
Benzo(a)anthracene	ug/kg	5200	18 J	1600	22 J	16000	360 J	96	7 J	1700	19 J	7500	17	2800	36	1500	15	530	7.9	3500	42	120	6.4 J	310	6.5 J
Benzo(a)pyrene	ug/kg	4900	17 J	1700	20 J	12000	340 J	76	6.5 J	1700	18 J	5700	16	3500	33	1600	14	510	7.4	4100	39	110	6 J	310	6.1 J
Benzo(b)fluoranthene	ug/kg	3900	22 J	1400	26 J	8100	440 J	56	8.4 J	1400	23 J	6000	20	2500	43	1300	18	350	9.6 J	4100	50	69	7.8 J	250	7.9 J
Benzo(ghi)perylene	ug/kg	920	20 J	490	24 J	7500	390 J	51	7.5 J	560	21 J	1900	18	2300	39	1200	17	220	8.6 J	1400	45 J	55	7 J	99	7.1 J
Benzo(k)fluoranthene	ug/kg	5400	27 J	1400	33 J	13000	540 J	76	10 J	1100	29 J	3800	25	3100	53	1400	23	500	12	3200	62	120	9.6 J	300	9.7 J
Chrysene	ug/kg	4800	20 J	1600	24 J	15000	390 J	93	7.5 J	1700	21 J	7300	18	2800	38	1200	16	520	8.5	3300	45	100	6.9 J	320	7 J
Dibenz(a,h)anthracene	ug/kg	400	24 J	140	29 J	2200	480 J	15	9.2 J	180	26 J	830	22 J	650	47 J	390	20 J	73	10 J	340	55 J	19	8.5 J	35	8.6 J
Fluoranthene	ug/kg	13000	24 J	3500	28 J	49000	470 J	570	9.1	3200	25 J	32000	22 J	4300	46	3400	20	880	10	6800	54	130	8.4 J	570	8.5
Fluorene	ug/kg	3400	60 J	360	72 J	58000	1200 J	3400	23	420	64 J	13000	56 J	310	120 J	1100	50	630	26	300	140 J	36	21 J	130	22 J
Indeno(1,2,3-cd)pyrene	ug/kg	1100	17 J	520	20 J	8400	340 J	58	6.5 J	630	18 J	2500	16	2600	33	1400	14	260	7.4 J	1800	39 J	65	6 J	130	6.1 J
Naphthalene	ug/kg	4200	67 J	350	81 J	4500000	1300 J	860	26	370	71 J	760	62 J	390	130 J	1400	56	850	29	390	150 J	95	24 J	280	24 J
Phenanthrene	ug/kg	12000	39 J	2100	47 J	100000	780 J	3900	15 J	1800	42 J	52000	36 J	1800	77 J	1200	33	570	17	2300	90 J	61	14 J	360	14 J
Pyrene	ug/kg	6600	19 J	1800	23 J	38000	380 J	360	7.3 J	1800	20 J	22000	18 J	3700	37	3200	16	770	8.3	3500	44	170	6.7 J	400	6.8
TOTAL PAHs	ug/kg	75,020		18,220		4,953,700		13,211		17,990		185,390		32,280		23,180		8,154		36,430		1,304		3,912	
		6%		2%		91%		7%		2%		0%		1%		6%		10%		1%		7%		7%	
Other SVOCs																									
2,4-Dimethylphenol	ug/kg	1100	110 U	1300	140 U	22000	2300 UJ	430	43 U	1200	120 U	1000	100 U	2200	220 U	940	95 U	490	49 U	2600	260 U	400	40 U	400	41 U
2-Methylnaphthalene	ug/kg	3200	75 J	160	91 J	210000	1500 J	1400	29	170	80 J	820	70 J	160	150 J	250	63 J	120	33 J	2600	170 U	400	27 U	200	27 J
2-Methylphenol	ug/kg	1100	55 U	1300	66 U	22000	1100 UJ	430	21 U	1200	58 U	1000	51 U	2200	110 U	940	46 U	490	24 U	2600	130 U	400	19 U	400	20 U
4-Chloroaniline	ug/kg	1100	44 UJ	1300	53 UJ	22000	880 UJ	430	17 U	1200	47 UJ	1000	41 U	2200	87 U	940	37 U	490	19 U	2600	100 U	400	16 U	400	16 U
4-Methylphenol	ug/kg	1100	110 U	1300	140 U	22000	2300 UJ	430	44 U	1200	120 U	1000	100 U	2200	220 U	940	95 U	490	49 U	2600	260 U	400	40 U	400	41 U
bis(2-Ethylhexyl) phthalate	ug/kg	270	20 UJ	520	24 J	22000	400 UJ	56	7.7 B	240	21 UJ	300	18 J	280	39 J	940	17 U	490	8.7 U	410	46 J	400	7.1 U	61	7.2 J
Carbazole	ug/kg	530	23 J	210	27 J	10000	460 J	3800	8.8 J	1200	24 UJ	3600	21	230	45 J	410	19 J	170	10 J	250	52 J	22	8.1 J	44	8.2 J
Dibenzofuran	ug/kg	1200	47 J	200	57 J	72000	940 J	1000	18	200	50 UJ	2100													

TABLE 1
Sediment Analytical Results
December 2000 Ohio River Sampling
Near the Koppers Follansbee, West Virginia Coal Tar Plant

Sample Location: Laboratory ID: Date Sampled:	SD-30-01 COL090119018 12/8/2000	SD-31-01 COL090119019 12/8/2000	SD-32-01 / SD-DUP-03 * COL090119010 12/7/2000	SD-33-01 COL090119005 12/7/2000	SD-34-01 COL080229008 12/6/2000	SD-35-01 COL080229004 12/6/2000	SD-36-01 COL090119026 12/8/2000	SD-37-01 COL090119012 12/7/2000	SD-38-01 COL090119011 12/7/2000	SD-39-01 COL090119009 12/7/2000	SD-40-01 COL080229007 12/6/2000												
PAHs																							
Acenaphthene	ug/kg	920000	8800 J	15000	410	725	69 J	4200	750 J	470	77 J	380	88 J	400	22	2600	200 J	30	21 J	80	25 J	1700	37
Acenaphthylene	ug/kg	19000	9700 J	1000	450 J	295	76 J	2800	830 J	240	85 J	180	97 J	390	24 U	350	230 J	370	23 U	40	27 J	48	41 J
Anthracene	ug/kg	5000000	4900 J	8900	230	1275	38 J	11000	420 J	880	43 J	480	49 J	110	12 J	5600	110	370	11 U	74	14 J	370	21 J
Benzo(a)anthracene	ug/kg	500000	2600 J	12000	120	2300	20 J	12000	220 J	1500	23	1600	26	330	6.4 J	6900	60	66	6.1 J	200	7.2 J	290	11 J
Benzo(a)pyrene	ug/kg	170000	2400 J	9500	110	1900	19 J	8700	210 J	1600	21	2300	24	420	6	4700	56	81	5.7 J	210	6.8 J	250	10 J
Benzo(b)fluoranthene	ug/kg	130000	3200 J	6900	150 J	1750	25 J	7600	270 J	1300	27 J	2900	31	300	7.7 J	3500	73 J	83	7.4 J	190	8.8 J	180	13 J
Benzo(ghi)perylene	ug/kg	65000	2800 J	3000	130 J	430	22 J	2300	240 J	540	25 J	500	28 J	160	6.9 J	2600	65 J	27	6.6 J	52	7.8 J	120	12 J
Benzo(k)fluoranthene	ug/kg	180000	3900 J	8900	180	1545	30 J	7700	330 J	1500	34	1600	39 U	360	9.5 J	4100	90	52	9.1 J	190	11 J	260	16 J
Chrysene	ug/kg	590000	2800 J	10000	130	2150	22 J	10000	240 J	1600	24	1700	28	330	6.9 J	6000	65	62	6.6 J	190	7.8 J	300	12 J
Dibenz(a,h)anthracene	ug/kg	320000	3500 UJ	1100	160 J	700	27 J	14000	300 UJ	170	30 J	220	34 J	50	8.5 J	470	80 J	370	8.1 U	450	9.6 U	37	15 J
Fluoranthene	ug/kg	1900000	3400 J	30000	160	5750	27 J	33000	290 J	2800	30	3900	34	520	8.3	12000	79	130	7.9 J	400	9.4 J	1200	14
Fluorene	ug/kg	1800000	8600 J	12000	400	585	68 J	5200	740 J	470	75 J	310	86 J	49	21 J	2900	200 J	370	20 U	55	24 J	350	36 J
Indeno(1,2,3-cd)pyrene	ug/kg	71000	2400 J	4300	110 J	490	19 J	2600	210 J	730	21 J	700	24 J	210	6 J	2600	56 J	29	5.7 J	60	6.8 J	140	10 J
Naphthalene	ug/kg	300000	9700 J	50000	450	2600	76 J	14000	820 UJ	560	84 J	410	96 J	35	24 J	3700	220 U	70	23 J	63	27 J	110	41 J
Phenanthrene	ug/kg	6200000	5600 J	34000	260	3050	44 J	20000	480 J	1900	49	1500	56 J	310	14 J	10000	130	59	13 J	190	16 J	1600	24
Pyrene	ug/kg	1400000	2700 J	21000	130	3000	21 J	19000	230 J	2000	24	1800	27	410	6.7	11000	63	90	6.4 J	260	7.6 J	820	11
TOTAL PAHs	ug/kg	19,245,000		227,600		27,945		146,100		18,260		18,880		3,994		75,320		779		2,254		7,775	
		2%		22%		9%		10%		3%		2%		1%		5%		9%		3%		1%	
Other SVOCs																							
2,4-Dimethylphenol	ug/kg	320000	16000 UJ	7500	760 U	1250	130 U	14000	1400 UJ	1400	140 U	1600	160 U	390	40 U	3700	380 U	43	38 J	450	45 U	670	69 U
2-Methylnaphthalene	ug/kg	250000	11000 J	7200	500 J	515	85 J	14000	920 UJ	200	94 J	210	110 J	51	27 J	3700	250 U	370	25 U	450	30 U	56	46 J
2-Methylphenol	ug/kg	320000	7900 UJ	7500	370 U	1250	62 U	14000	670 UJ	1400	69 U	1600	78 U	390	19 U	3700	180 U	370	18 U	450	22 U	670	33 U
4-Chloroaniline	ug/kg	320000	6400 UJ	7500	300 U	1250	50 UJ	14000	540 UJ	1400	55 U	1600	63 U	390	16 U	3700	150 U	370	15 U	450	18 U	670	27 U
4-Methylphenol	ug/kg	320000	16000 UJ	7500	760 U	1250	130 U	14000	1400 UJ	1400	140 U	1600	160 U	390	40 U	3700	380 U	370	38 U	450	45 U	670	69 U
bis(2-Ethylhexyl) phthalate	ug/kg	320000	2900 UJ	7500	130 U	225	22 J	14000	240 UJ	340	25 J	580	29 J	29	7 J	3700	66 U	38	6.7 J	71	8 J	140	12 J
Carbazole	ug/kg	1500000	3300 J	2700	150 J	425	26 J	14000	280 UJ	130	29 J	160	33 J	43	8.1 J	3700	76 U	370	7.6 U	450	9.1 U	92	14 J
Dibenzofuran	ug/kg	870000	6800 J	9900	320	470	53 J	1700	580 J	300	59 J	210	68 J	27	17 J	1300	160 J	370	16 U	31	19 J	150	29 J
Di-n-octyl phthalate	ug/kg	320000	3300 UJ	7500	160 U	1250	26 UJ	14000	280 UJ	1400	29 U	1600	33 U	390	8.2 U	3700	77 U	370	7.8 U	450	9.3 U	670	14 U
Phenol	ug/kg	320000	11000 UJ	7500	500 U	1250	83 U	14000	910 UJ	1400	92 U	1600	110 U	390	26 U	3700	250 U	370	25 U	450	30 U	670	45 U
VOCs																							
Benzene	ug/kg	n/a	n/a	n/a	n/a	9.3	2.1 U	n/a	n/a	n/a	n/a	n/a	n/a	6	1.3 U	n/a	n/a	n/a	n/a	6.8	1.5 U	n/a	n/a
Ethylbenzene	ug/kg	n/a	n/a	n/a	n/a	9.3	1.9 U	n/a	n/a	n/a	n/a	n/a	n/a	6	1.2 U	n/a	n/a	n/a	n/a	6.8	1.4 U	n/a	n/a
Methylene chloride	ug/kg	n/a	n/a	n/a	n/a	9.3	7.3 U	n/a	n/a	n/a	n/a	n/a	n/a	6	4.6 U	n/a	n/a	n/a	n/a	6.8	5.2 U	n/a	n/a
Toluene	ug/kg	n/a	n/a	n/a	n/a	9.3	2.8 U	n/a	n/a	n/a	n/a	n/a	n/a	6	1.8 U	n/a	n/a	n/a	n/a	6.8	2 U	n/a	n/a
Xylenes (total)	ug/kg	n/a	n/a	n/a	n/a	9.3	1.7 U	n/a	n/a	n/a	n/a	n/a	n/a	6	1.1 U	n/a	n/a	n/a	n/a	6.8	1.2 U	n/a	n/a
Inorganics																							
Aluminum	mg/kg	n/a	n/a	n/a	n/a	6975	2.4	n/a	n/a	n/a	n/a	n/a	n/a	4740	1.5	n/a	n/a	n/a	n/a	1910	1.7	n/a	n/a
Antimony	mg/kg	n/a	n/a	n/a	n/a	1.35	0.28 B	n/a	n/a	n/a	n/a	n/a	n/a	1.1	0.17 B	n/a	n/a	n/a	n/a	0.76	0.2 B	n/a	n/a
Arsenic	mg/kg	n/a	n/a	n/a	n/a	9.1	0.49	n/a	n/a	n/a	n/a	n/a	n/a	14.7	0.31	n/a	n/a	n/a	n/a	5.6	0.35	n/a	n/a
Barium	mg/kg	n/a	n/a	n/a	n/a	96.85	0.079	n/a	n/a	n/a	n/a	n/a	n/a	114	0.049	n/a	n/a	n/a	n/a	24.5	0.056	n/a	n/a
Beryllium	mg/kg	n/a	n/a	n/a	n/a	1.2	0.014	n/a	n/a	n/a	n/a	n/a	n/a	0.76	0.0085	n/a	n/a	n/a	n/a	0.26	0.0096 B	n/a	n/a
Cadmium	mg/kg	n/a	n/a	n/a	n/a	1.1	0.094 J	n/a	n/a	n/a	n/a	n/a	n/a	0.79	0.059 J	n/a	n/a	n/a	n/a	0.24	0.067 J	n/a	n/a
Calcium	mg/kg	n/a	n/a	n/a	n/a	3410	7.1 L	n/a	n/a	n/a	n/a	n/a	n/a	28700	4.5 L	n/a	n/a	n/a	n/a	694	5.1 L	n/a	n/a
Chromium	mg/kg	n/a	n/a	n/a	n/a	32	0.19 L	n/a	n/a	n/a	n/a	n/a	n/a	12	0.12 L	n/a	n/a	n/a	n/a	6.5	0.13 L	n/a	n/a
Cobalt	mg/kg	n/a	n/a	n/a	n/a	26.95	0.61	n/a	n/a	n/a	n/a	n/a	n/a	19.1	0.38	n/a	n/a	n/a	n/a	7	0.43	n/a	n/a
Copper	mg/kg	n/a	n/a	n/a	n/a	44.95	0.41	n/a	n/a	n/a	n/a	n/a	n/a	18.2	0.26	n/a	n/a	n/a	n/a	11	0.29	n/a	n/a
Iron	mg/kg	n/a	n/a	n/a	n/a	36200	1.7	n/a	n/a	n/a	n/a	n/a	n/a	45200	1.1	n/a	n/a	n/a	n/a	15000			

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-01 COL140114018 12/13/2000	SQL	MDL	SW-02 COL140114017 12/13/2000	SQL	MDL	SW-03 COL140114016 12/13/2000	SQL	MDL	SW-04 COL140114015 12/13/2000	SQL	MDL	SW-05 COL140114014 12/13/2000	SQL	MDL	SW-06 COL140114013 12/13/2000	SQL	MDL	SW-07 COL140114012 12/13/2000	SQL	MDL	SW-08 COL140114011 12/13/2000	SQL	MDL	SW-09 COL140114010 12/13/2000	SQL	MDL	SW-10 COL140114009 12/13/2000	SQL	MDL	
PAHs																															
Acenaphthene	ug/L	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U
Acenaphthylene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U
Anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U
Benzo(a)anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U
Benzo(a)pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U
Benzo(b)fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U
Benzo(g,h)perylene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U
Benzo(k)fluoranthene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U
Chrysene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U
Dibenz(a,h)anthracene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U
Fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U
Fluorene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U
Indeno(1,2,3-cd)pyrene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U
Naphthalene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U
Phenanthrene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U
Pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U
TOTAL PAHs	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Table 2
Surface Water Analytical Results
Surface Water/Sediment Investigation
Upers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-01 COL140114018 12/13/2000	SW-02 COL140114017 12/13/2000	SW-03 COL140114016 12/13/2000	SW-04 COL140114015 12/13/2000	SW-05 COL140114014 12/13/2000	SW-06 COL140114013 12/13/2000	SW-07 COL140114012 12/13/2000	SW-08 COL140114011 12/13/2000	SW-09 COL140114010 12/13/2000	SW-10 COL140114009 12/13/2000	
	SQL	MDL									
Other SVOCs											
1,2,4-Trichlorobenzene	ug/L	10	2.9 U	10	2.9 U						
1,2-Dichlorobenzene	ug/L	10	2.4 U	10	2.4 U						
1,3-Dichlorobenzene	ug/L	10	2.7 U	10	2.7 U						
1,4-Dichlorobenzene	ug/L	10	3 U	10	3 U						
2,2'-oxybis(1-Chloropropane)	ug/L	10	3 U	10	3 U						
2,4,5-Trichlorophenol	ug/L	10	3.4 U	10	3.4 U						
2,4,6-Trichlorophenol	ug/L	10	3.7 U	10	3.7 U						
2,4-Dichlorophenol	ug/L	10	3.4 U	10	3.4 U						
2,4-Dimethylphenol	ug/L	10	6.2 U	10	6.2 U						
2,4-Dinitrophenol	ug/L	50	2.2 U	50	2.2 U						
2,4-Dinitrotoluene	ug/L	10	2.7 U	10	2.7 U						
2,6-Dinitrotoluene	ug/L	10	3.1 U	10	3.1 U						
2-Chloronaphthalene	ug/L	10	3.3 U	10	3.3 U						
2-Chlorophenol	ug/L	10	2.9 U	10	2.9 U						
2-Methylnaphthalene	ug/L	10	3.2 U	10	3.2 U						
2-Methylphenol	ug/L	10	3.7 U	10	3.7 U						
2-Nitroaniline	ug/L	50	3 U	50	3 U						
2-Nitrophenol	ug/L	10	2.3 U	10	2.3 U						
3,3'-Dichlorobenzidine	ug/L	50	5.5 U	50	5.5 U						
3-Nitroaniline	ug/L	50	2.2 U	50	2.2 U						
4,6-Dinitro-2-methylphenol	ug/L	50	3 U	50	3 U						
4-Bromophenyl phenyl ether	ug/L	10	3 U	10	3 U						
4-Chloro-3-methylphenol	ug/L	10	3.7 U	10	3.7 U						
4-Chloroaniline	ug/L	10	1.5 U	10	1.5 U						
4-Chlorophenyl phenyl ether	ug/L	10	3.2 U	10	3.2 U						
4-Methylphenol	ug/L	10	6.8 U	10	6.8 U						
4-Nitroaniline	ug/L	50	2.4 U	50	2.4 U						
4-Nitrophenol	ug/L	50	2.9 U	50	2.9 U						
Benzoic Acid	ug/L	n/a									
Benzyl Alcohol	ug/L	n/a									
bis(2-Chloroethoxy)methane	ug/L	10	4.1 U	10	4.1 U						
bis(2-Chloroethyl) ether	ug/L	10	3.1 U	10	3.1 U						
bis(2-Ethylhexyl) phthalate	ug/L	10	4.1 U	10	4.1 U						
Butyl benzyl phthalate	ug/L	10	3.7 U	10	3.7 U						
Carbazole	ug/L	10	4.7 U	10	4.7 U						
Dibenzofuran	ug/L	10	3.5 U	10	3.5 U						
Diethyl phthalate	ug/L	10	3 U	10	3 U						
Dimethyl phthalate	ug/L	10	3.2 U	10	3.2 U						
Di-n-butyl phthalate	ug/L	10	3.6 U	10	3.6 U						
Di-n-octyl phthalate	ug/L	10	4.2 U	10	4.2 U						
Hexachlorobenzene	ug/L	10	3.4 U	10	3.4 U						
Hexachlorobutadiene	ug/L	10	2.8 U	10	2.8 U						
Hexachlorocyclopentadiene	ug/L	50	0.5 U	50	0.5 U						
Hexachloroethane	ug/L	10	2.7 U	10	2.7 U						
Isophorone	ug/L	10	3.5 U	10	3.5 U						
Nitrobenzene	ug/L	10	3.5 U	10	3.5 U						
N-Nitrosodi-n-propylamine	ug/L	10	2.8 U	10	2.8 U						
N-Nitrosodiphenylamine	ug/L	10	7.2 U	10	7.2 U						
Pentachlorophenol	ug/L	50	4.3 U	50	4.3 U						
Phenol	ug/L	10	3.1 U	10	3.1 U						
VOCs											
1,1,1-Trichloroethane	ug/L	5	1.6 U	5	1.6 U						
1,1,2-Tetrachloroethane	ug/L	5	1.7 U	5	1.7 U						
1,1,2-Trichloroethane	ug/L	5	1.5 U	5	1.5 U						
1,1-Dichloroethane	ug/L	5	1.5 U	5	1.5 U						
1,1-Dichloroethene	ug/L	5	1.4 U	5	1.4 U						
1,2-Dichloroethane	ug/L	5	1.6 U	5	1.6 U						
1,2-Dichloroethene (total)	ug/L	5	3.1 U	5	3.1 U						
1,2-Dichloropropane	ug/L	5	1.5 U	5	1.5 U						
2-Butanone	ug/L	20	1.7 U	20	1.7 U						
2-Hexanone	ug/L	20	3.9 U	20	3.9 U						
4-Methyl-2-pentanone	ug/L	20	3.1 U	20	3.1 U						
Acetone	ug/L	3	1.4 B	3	1.4 B						
Benzene	ug/L	5	1.7 U	5	1.7 U						
Bromodichloromethane	ug/L	5	1.5 U	5	1.5 U						
Bromoform	ug/L	5	1.6 U	5	1.6 U						
Bromomethane	ug/L	10	0.75 U	10	0.75 U						
Carbon disulfide	ug/L	5	0.79 U	5	0.79 U						
Carbon tetrachloride	ug/L	5	1.5 U	5	1.5 U						
Chlorobenzene	ug/L	5	1.6 U	5	1.6 U						
Chloroethane	ug/L	10	2 U	10	2 U						
Chloroform	ug/L	5	1.6 U	5	1.6 U						
Chlormethane	ug/L	10	1.1 U	10	1.1 U						
cis-1,3-Dichloropropene	ug/L	5	1.6 U	5	1.6 U						
Dibromochloromethane	ug/L	5	1.5 U	5	1.5 U						
Ethylbenzene	ug/L	5	1.3 U	5	1.3 U						
Methylene chloride	ug/L	5	1.7 U	5	1.7 U						
Styrene	ug/L	5	1.6 U	5	1.6 U						
Tetrachloroethene	ug/L	5	1.4 U	5	1.4 U						
Toluene	ug/L	5	1.7 U	5	1.7 U						
trans-1,3-Dichloropropene	ug/L	5	1.6 U	5	1.6 U						
Trichloroethene	ug/L	5	1.5 U	5	1.5 U						
Vinyl chloride	ug/L	10	1.4 U	10	1.4 U						
Xylenes (total)	ug/L	5	1.6 U	5	1.6 U						

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-01 COL140114018 12/13/2000	SQL	MDL	SW-02 COL140114017 12/13/2000	SQL	MDL	SW-03 COL140114016 12/13/2000	SQL	MDL	SW-04 COL140114015 12/13/2000	SQL	MDL	SW-05 COL140114014 12/13/2000	SQL	MDL	SW-06 COL140114013 12/13/2000	SQL	MDL	SW-07 COL140114012 12/13/2000	SQL	MDL	SW-08 COL140114011 12/13/2000	SQL	MDL	SW-09 COL140114010 12/13/2000	SQL	MDL	SW-10 COL140114009 12/13/2000	SQL	MDL
Inorganics																														
Aluminum	ug/L	125	12.7	n/a	n/a	n/a	n/a	n/a	93.3	12.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Antimony	ug/L	10	1.4 U	n/a	n/a	n/a	n/a	n/a	10	1.4 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Arsenic	ug/L	10	2.6 U	n/a	n/a	n/a	n/a	n/a	10	2.6 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Barium	ug/L	41.1	0.41	n/a	n/a	n/a	n/a	n/a	42	0.41	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Beryllium	ug/L	5	0.071 U	n/a	n/a	n/a	n/a	n/a	5	0.071 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Cadmium	ug/L	5	0.49 U	n/a	n/a	n/a	n/a	n/a	5	0.49 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Calcium	ug/L	29500	37.9	n/a	n/a	n/a	n/a	n/a	29100	37.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Chromium	ug/L	1.1	1 B	n/a	n/a	n/a	n/a	n/a	1.6	1 B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Cobalt	ug/L	50	3.2 U	n/a	n/a	n/a	n/a	n/a	50	3.2 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Copper	ug/L	2.7	2.2	n/a	n/a	n/a	n/a	n/a	4.1	2.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Iron	ug/L	392	8.8	n/a	n/a	n/a	n/a	n/a	354	8.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Lead	ug/L	3	1.9 U	n/a	n/a	n/a	n/a	n/a	3	1.9 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Magnesium	ug/L	7300	19.9	n/a	n/a	n/a	n/a	n/a	7280	19.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Manganese	ug/L	108	0.87	n/a	n/a	n/a	n/a	n/a	105	0.87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Mercury	ug/L	0.2	0.045 U	n/a	n/a	n/a	n/a	n/a	0.045	0.045	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Nickel	ug/L	6.2	6.1	n/a	n/a	n/a	n/a	n/a	40	6.1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Potassium	ug/L	1890	496	n/a	n/a	n/a	n/a	n/a	2100	496	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Selenium	ug/L	5	2.1 U	n/a	n/a	n/a	n/a	n/a	5	2.1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Silver	ug/L	5	0.94 U	n/a	n/a	n/a	n/a	n/a	5	0.94 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Sodium	ug/L	23100	14.5	n/a	n/a	n/a	n/a	n/a	23100	14.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Thallium	ug/L	10	3.9 U	n/a	n/a	n/a	n/a	n/a	10	3.9 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Vanadium	ug/L	50	1.8 U	n/a	n/a	n/a	n/a	n/a	50	1.8 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Zinc	ug/L	6.7	3.1	n/a	n/a	n/a	n/a	n/a	6.5	3.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									
Cyanide, Total	ug/L	10	1 U	n/a	n/a	n/a	n/a	n/a	10	1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a									

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-11 COL140114008 12/13/2000	SQL	MDL	SW-12 COL140114007 12/13/2000	SQL	MDL	SW-13 COL140114006 12/13/2000	SQL	MDL	SW-14 COL140114005 12/13/2000	SQL	MDL	SW-15 COL140114004 12/13/2000	SQL	MDL	SW-16 COL140114003 12/13/2000	SQL	MDL	SW-17 COL140114002 12/13/2000	SQL	MDL	SW-18 COL140114001 12/13/2000	SQL	MDL	SW-DUP-01-3 COL140114019 12/13/2000	SQL	MDL	SW-DUP-02-3 COL140114020 12/13/2000	SQL	MDL	SW-19 COL120130007 12/11/2000	SQL	MDL	SW-20 COL120130006 12/11/2000	SQL	MDL
PAHs																																				
Acenaphthene	ug/L	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U	10	3.6 U			
Acenaphthylene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U			
Anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U			
Benzo(a)anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U			
Benzo(a)pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U			
Benzo(b)fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U			
Benzo(ghi)perylene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U			
Benzo(k)fluoranthene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U			
Chrysene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U			
Dibenz(a,h)anthracene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U			
Fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U			
Fluorene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U			
Indeno(1,2,3-cd)pyrene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U			
Naphthalene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U			
Phenanthrene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U			
Pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U			
TOTAL PAHs	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 uppers Industries Follansbee, West Virginia Plant

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-11 COL140114008 12/13/2000	SQL	MDL	SW-12 COL140114007 12/13/2000	SQL	MDL	SW-13 COL140114006 12/13/2000	SQL	MDL	SW-14 COL140114005 12/13/2000	SQL	MDL	SW-15 COL140114004 12/13/2000	SQL	MDL	SW-16 COL140114003 12/13/2000	SQL	MDL	SW-17 COL140114002 12/13/2000	SQL	MDL	SW-18 COL140114001 12/13/2000	SQL	MDL	SW-DUP-01-3 COL140114019 12/13/2000	SQL	MDL	SW-DUP-02-3 COL140114020 12/13/2000	SQL	MDL	SW-19 COL120130007 12/11/2000	SQL	MDL	SW-20 COL120130006 12/11/2000	SQL	MDL
Inorganics																																				
Aluminum ug/L	141	12.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	112	12.7	n/a	n/a	n/a	n/a	n/a	110	12.7	125	12.7	193	12.7	n/a													
Antimony ug/L	10	1.4 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	1.4 U	n/a	n/a	n/a	n/a	n/a	10	1.4 U	10	1.4 U	2.4	1.4 B	n/a													
Arsenic ug/L	10	2.6 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	2.6 U	n/a	n/a	n/a	n/a	n/a	10	2.6 U	10	2.6 U	n/a	n/a	n/a													
Barium ug/L	39.8	0.41	n/a	n/a	n/a	n/a	n/a	n/a	n/a	39.9	0.41	n/a	n/a	n/a	n/a	n/a	41.2	0.41	40.3	0.41	42.3	0.41	n/a													
Beryllium ug/L	5	0.071 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	0.071 U	n/a	n/a	n/a	n/a	n/a	5	0.071 U	5	0.071 U	n/a	n/a	n/a													
Cadmium ug/L	5	0.49 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	0.49 U	n/a	n/a	n/a	n/a	n/a	5	0.49 U	5	0.49 U	1.2	1	n/a													
Calcium ug/L	28100	37.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	29600	37.9	n/a	n/a	n/a	n/a	n/a	29100	37.9	29300	37.9	29200	37.9	n/a													
Chromium ug/L	1.6	1 B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.3	1 B	n/a	n/a	n/a	n/a	n/a	1.6	1 B	1.4	1 B	6.5	3.9	n/a													
Cobalt ug/L	50	3.2 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	50	3.2 U	n/a	n/a	n/a	n/a	n/a	50	3.2 U	50	3.2 U	50	3.2 U	n/a													
Copper ug/L	4.6	2.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.4	2.2	n/a	n/a	n/a	n/a	n/a	2.4	2.2	2.9	2.2	2.8	2.2	n/a													
Iron ug/L	469	8.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	430	8.8	n/a	n/a	n/a	n/a	n/a	432	8.8	478	8.8	475	8.8	n/a													
Lead ug/L	3	1.9 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.3	1.9	n/a	n/a	n/a	n/a	n/a	2	1.9	1.9	1.9	3	1.9 U	n/a													
Magnesium ug/L	6990	19.9	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7270	19.9	n/a	n/a	n/a	n/a	n/a	7230	19.9	7250	19.9	7260	19.9	n/a													
Manganese ug/L	107	0.87	n/a	n/a	n/a	n/a	n/a	n/a	n/a	107	0.87	n/a	n/a	n/a	n/a	n/a	107	0.87	110	0.87	92.7	0.87	n/a													
Mercury ug/L	0.1	0.045	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.045 U	n/a	n/a	n/a	n/a	n/a	0.079	0.045	0.056	0.045	0.087	0.045	n/a													
Nickel ug/L	40	6.1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.8	6.1	n/a	n/a	n/a	n/a	n/a	40	6.1 U	40	6.1 U	40	6.1 U	n/a													
Potassium ug/L	2260	496	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1990	496	n/a	n/a	n/a	n/a	n/a	1790	496	1740	496	2580	496	n/a													
Selenium ug/L	5	2.1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	2.1 U	n/a	n/a	n/a	n/a	n/a	5	2.1 U	5	2.1 U	5	2.1 U	n/a													
Silver ug/L	5	0.94 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	0.94 U	n/a	n/a	n/a	n/a	n/a	5	0.94 U	5	0.94 U	5	0.94 U	n/a													
Sodium ug/L	21700	14.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	22100	14.5	n/a	n/a	n/a	n/a	n/a	22800	14.5	22500	14.5	22400	14.5	n/a													
Thallium ug/L	10	3.9 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	3.9 U	n/a	n/a	n/a	n/a	n/a	10	3.9 U	10	3.9 U	5	0.49 U	n/a													
Vanadium ug/L	50	1.8 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	50	1.8 U	n/a	n/a	n/a	n/a	n/a	50	1.8 U	50	1.8 U	2.8	1.8	n/a													
Zinc ug/L	11.4	3.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.5	3.1	n/a	n/a	n/a	n/a	n/a	8	3.1	9.3	3.1	7.3	3.1	n/a													
Cyanide, Total ug/L	10	1 U	n/a	n/a	n/a	n/a	n/a	n/a	n/a	10	1 U	n/a	n/a	n/a	n/a	n/a	10	1 U	10	1 U	10	1 U	n/a													

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-21 COL120130005 12/11/2000		SW-22 COL120130004 12/11/2000		SW-23 COL120130003 12/11/2000		SW-24 COL120130002 12/11/2000		SW-25 COL120130001 12/11/2000		SW-26 COL120130025 12/11/2000		SW-27 COL120130024 12/11/2000		SW-28 COL120130023 12/11/2000		SW-29 COL120130022 12/11/2000		SW-30 COL120130021 12/11/2000		SW-31 COL120130020 12/11/2000				
	SQL	MDL	SQL	MDL																					
<i>PAHs</i>																									
Acenaphthene	ug/L	10	3.6 U	10	3.6 U	10	3.6 U																		
Acenaphthylene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U																		
Anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U																		
Benzo(a)anthracene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U																		
Benzo(a)pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U																		
Benzo(b)fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U																		
Benzo(ghi)perylene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U																		
Benzo(k)fluoranthene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U																		
Chrysene	ug/L	10	3.7 U	10	3.7 U	10	3.7 U																		
Dibenz(a,h)anthracene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U																		
Fluoranthene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U																		
Fluorene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U																		
Indeno(1,2,3-cd)pyrene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U																		
Naphthalene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U																		
Phenanthrene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U																		
Pyrene	ug/L	10	3.4 U	10	3.4 U	10	3.4 U																		
TOTAL PAHs	ug/L	ND	ND	ND	ND	ND																			

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-21 COL120130005 12/11/2000	SQL	MDL	SW-22 COL120130004 12/11/2000	SQL	MDL	SW-23 COL120130003 12/11/2000	SQL	MDL	SW-24 COL120130002 12/11/2000	SQL	MDL	SW-25 COL120130001 12/11/2000	SQL	MDL	SW-26 COL120130025 12/11/2000	SQL	MDL	SW-27 COL120130024 12/11/2000	SQL	MDL	SW-28 COL120130023 12/11/2000	SQL	MDL	SW-29 COL120130022 12/11/2000	SQL	MDL	SW-30 COL120130021 12/11/2000	SQL	MDL	SW-31 COL120130020 12/11/2000	SQL	MDL						
<i>Other SVOCs</i>																																							
1,2,4-Trichlorobenzene	ug/L	10	2.9 U		10	2.9 U																																	
1,2-Dichlorobenzene	ug/L	10	2.4 U		10	2.4 U																																	
1,3-Dichlorobenzene	ug/L	10	2.7 U		10	2.7 U																																	
1,4-Dichlorobenzene	ug/L	10	3 U		10	3 U		10	3 U																														
2,2'-oxybis(1-Chloropropane)	ug/L	10	3 U		10	3 U		10	3 U																														
2,4,5-Trichlorophenol	ug/L	10	3.4 U		10	3.4 U		10	3.4 U																														
2,4,6-Trichlorophenol	ug/L	10	3.7 U		10	3.7 U		10	3.7 U																														
2,4-Dichlorophenol	ug/L	10	3.4 U		10	3.4 U		10	3.4 U																														
2,4-Dimethylphenol	ug/L	10	6.2 U		10	6.2 U		10	6.2 U																														
2,4-Dinitrophenol	ug/L	50	2.2 U		50	2.2 U		50	2.2 U																														
2,4-Dinitrotoluene	ug/L	10	2.7 U		10	2.7 U		10	2.7 U																														
2,6-Dinitrotoluene	ug/L	10	3.1 U		10	3.1 U		10	3.1 U																														
2-Chloronaphthalene	ug/L	10	3.3 U		10	3.3 U		10	3.3 U																														
2-Chlorophenol	ug/L	10	2.9 U		10	2.9 U		10	2.9 U																														
2-Methylnaphthalene	ug/L	10	3.2 U		10	3.2 U		10	3.2 U																														
2-Methylphenol	ug/L	10	3.7 U		10	3.7 U		10	3.7 U																														
2-Nitroaniline	ug/L	50	3 U		50	3 U		50	3 U		50	3 U																											
2-Nitrophenol	ug/L	10	2.3 U		10	2.3 U		10	2.3 U																														
3,3'-Dichlorobenzidine	ug/L	50	5.5 U		50	5.5 U		50	5.5 U																														
3-Nitroaniline	ug/L	50	2.2 U		50	2.2 U		50	2.2 U																														
4,6-Dinitro-2-methylphenol	ug/L	50	3 U		50	3 U		50	3 U																														
4-Bromophenyl phenyl ether	ug/L	10	3 U		10	3 U		10	3 U																														
4-Chloro-3-methylphenol	ug/L	10	3.7 U		10	3.7 U		10	3.7 U																														
4-Chloroaniline	ug/L	10	1.5 U		10	1.5 U		10	1.5 U																														
4-Chlorophenyl phenyl ether	ug/L	1																																					

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-21 COL120130005 12/11/2000 SQL MDL	SW-22 COL120130004 12/11/2000 SQL MDL	SW-23 COL120130003 12/11/2000 SQL MDL	SW-24 COL120130002 12/11/2000 SQL MDL	SW-25 COL120130001 12/11/2000 SQL MDL	SW-26 COL120130025 12/11/2000 SQL MDL	SW-27 COL120130024 12/11/2000 SQL MDL	SW-28 COL120130023 12/11/2000 SQL MDL	SW-29 COL120130022 12/11/2000 SQL MDL	SW-30 COL120130021 12/11/2000 SQL MDL	SW-31 COL120130020 12/11/2000 SQL MDL	
Inorganics												
Aluminum ug/L	161	12.7 B	n/a	n/a	n/a	151	12.7 B	n/a	n/a	n/a	n/a	n/a
Antimony ug/L	1.5	1.4 B	n/a	n/a	n/a	10	1.4 U	n/a	n/a	n/a	n/a	n/a
Arsenic ug/L	10	2.6 U	n/a	n/a	n/a	10	2.6 U	n/a	n/a	n/a	n/a	n/a
Barium ug/L	38.2	0.41	n/a	n/a	n/a	38.1	0.41	n/a	n/a	n/a	n/a	n/a
Beryllium ug/L	0.09	0.071	n/a	n/a	n/a	5	0.071 U	n/a	n/a	n/a	n/a	n/a
Cadmium ug/L	5	0.49 U	n/a	n/a	n/a	5	0.49 U	n/a	n/a	n/a	n/a	n/a
Calcium ug/L	29700	37.9	n/a	n/a	n/a	28700	37.9	n/a	n/a	n/a	n/a	n/a
Chromium ug/L	1.8	1 B	n/a	n/a	n/a	1.9	1 B	n/a	n/a	n/a	n/a	n/a
Cobalt ug/L	50	3.2 U	n/a	n/a	n/a	50	3.2 U	n/a	n/a	n/a	n/a	n/a
Copper ug/L	25	2.2 U	n/a	n/a	n/a	25	2.2 U	n/a	n/a	n/a	n/a	n/a
Iron ug/L	442	8.8	n/a	n/a	n/a	421	8.8	n/a	n/a	n/a	n/a	n/a
Lead ug/L	3	1.9 U	n/a	n/a	n/a	3	1.9 U	n/a	n/a	n/a	n/a	n/a
Magnesium ug/L	6940	19.9	n/a	n/a	n/a	6810	19.9 B	n/a	n/a	n/a	n/a	n/a
Manganese ug/L	90.7	0.87	n/a	n/a	n/a	87	0.87	n/a	n/a	n/a	n/a	n/a
Mercury ug/L	0.12	0.045	n/a	n/a	n/a	0.096	0.045	n/a	n/a	n/a	n/a	n/a
Nickel ug/L	40	6.1 U	n/a	n/a	n/a	40	6.1 U	n/a	n/a	n/a	n/a	n/a
Potassium ug/L	2550	496	n/a	n/a	n/a	2480	496	n/a	n/a	n/a	n/a	n/a
Selenium ug/L	5	2.1 U	n/a	n/a	n/a	5	2.1 U	n/a	n/a	n/a	n/a	n/a
Silver ug/L	5	0.94 U	n/a	n/a	n/a	5	0.94 U	n/a	n/a	n/a	n/a	n/a
Sodium ug/L	20200	14.5	n/a	n/a	n/a	19600	14.5	n/a	n/a	n/a	n/a	n/a
Thallium ug/L	10	3.9 U	n/a	n/a	n/a	10	3.9 U	n/a	n/a	n/a	n/a	n/a
Vanadium ug/L	50	1.8 U	n/a	n/a	n/a	50	1.8 U	n/a	n/a	n/a	n/a	n/a
Zinc ug/L	7.3	3.1	n/a	n/a	n/a	7.6	3.1	n/a	n/a	n/a	n/a	n/a
Cyanide, Total ug/L	10	1 U	n/a	n/a	n/a	10	1 U	n/a	n/a	n/a	n/a	n/a

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-32 COL120130019 12/11/2000	SQL	MDL	SW-33 COL120130018 12/11/2000	SQL	MDL	SW-34 COL120130017 12/11/2000	SQL	MDL	SW-35 COL120130016 12/11/2000	SQL	MDL	SW-36 COL120130015 12/11/2000	SQL	MDL	SW-37 COL120130014 12/11/2000	SQL	MDL	SW-38 COL120130013 12/11/2000	SQL	MDL	SW-DUP-01-1 COL120130008 12/11/2000	SQL	MDL	SW-DUP-01-2 COL120130010 12/11/2000	SQL	MDL	SW-DUP-02-1 COL120130009 12/11/2000	SQL	MDL	SW-DUP-02-2 COL120130011 12/13/2000	SQL	MDL	BK-TRIB-01 COL140114021 WATER 12/13/2000
<i>PAHs</i>																																		
Acenaphthene	ug/L		10	3.6 U		10	3.6 U		10	3.6 U		10	3.6 U		10	3.6 U																		
Acenaphthylene	ug/L		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U																		
Anthracene	ug/L		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U																		
Benzo(a)anthracene	ug/L		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U																		
Benzo(a)pyrene	ug/L		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U																		
Benzo(b)fluoranthene	ug/L		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U																		
Benzo(ghi)perylene	ug/L		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U																		
Benzo(k)fluoranthene	ug/L		10	3.7 U		10	3.7 U		10	3.7 U		10	3.7 U		10	3.7 U																		
Chrysene	ug/L		10	3.7 U		10	3.7 U		10	3.7 U		10	3.7 U		10	3.7 U																		
Dibenz(a,h)anthracene	ug/L		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U																		
Fluoranthene	ug/L		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U																		
Fluorene	ug/L		10	3.2 U		10	3.2 U		10	3.2 U		10	3.2 U		10	3.2 U																		
Indeno(1,2,3-cd)pyrene	ug/L		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U		10	3.1 U																		
Naphthalene	ug/L		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U		10	3.3 U																		
Phenanthrene	ug/L		10	3.2 U		10	3.2 U		10	3.2 U		10	3.2 U		10	3.2 U																		
Pyrene	ug/L		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U		10	3.4 U																		
TOTAL PAHs	ug/L		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-32 COL120130019 12/11/2000	SQL	MDL	SW-33 COL120130018 12/11/2000	SQL	MDL	SW-34 COL120130017 12/11/2000	SQL	MDL	SW-35 COL120130016 12/11/2000	SQL	MDL	SW-36 COL120130015 12/11/2000	SQL	MDL	SW-37 COL120130014 12/11/2000	SQL	MDL	SW-38 COL120130013 12/11/2000	SQL	MDL	SW-DUP-01-1 COL120130008 12/11/2000	SQL	MDL	SW-DUP-01-2 COL120130010 12/11/2000	SQL	MDL	SW-DUP-02-1 COL120130009 12/11/2000	SQL	MDL	SW-DUP-02-2 COL120130011 12/11/2000	SQL	MDL	BK-TRIB-01 COL140114021 12/13/2000	WATER SQL	MDL
Other SVOCs																																				
1,2,4-Trichlorobenzene	ug/L	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U			
1,2-Dichlorobenzene	ug/L	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U	10	2.4 U					
1,3-Dichlorobenzene	ug/L	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U							
1,4-Dichlorobenzene	ug/L	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U					
2,2'-oxybis(1-Chloropropane)	ug/L	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U					
2,4,5-Trichlorophenol	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U					
2,4,6-Trichlorophenol	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U					
2,4-Dichlorophenol	ug/L	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U	10	3.4 U					
2,4-Dimethylphenol	ug/L	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U	10	6.2 U					
2,4-Dinitrophenol	ug/L	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U					
2,4-Dinitrotoluene	ug/L	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U	10	2.7 U					
2,6-Dinitrotoluene	ug/L	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U	10	3.1 U					
2-Chloronaphthalene	ug/L	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U	10	3.3 U					
2-Chlorophenol	ug/L	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U	10	2.9 U					
2-Methylnaphthalene	ug/L	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U	10	3.2 U					
2-Methylphenol	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U					
2-Nitroaniline	ug/L	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U					
2-Nitrophenol	ug/L	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U	10	2.3 U					
3,3'-Dichlorobenzidine	ug/L	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U	50	5.5 U					
3-Nitroaniline	ug/L	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U	50	2.2 U							
4,6-Dinitro-2-methylphenol	ug/L	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U	50	3 U					
4-Bromophenyl phenyl ether	ug/L	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U	10	3 U					
4-Chloro-3-methylphenol	ug/L	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U	10	3.7 U							
4-Chloroaniline	ug/L	10	1.5 U	10	1.5 U	10	1.5 U	10</td																												

Table 2
 Surface Water Analytical Results
 Surface Water/Sediment Investigation
 Koppers Industries Follansbee, West Virginia Plant

Sample Location: Laboratory ID: Date Sampled:	SW-32 COL120130019 12/11/2000	SQL	MDL	SW-33 COL120130018 12/11/2000	SQL	MDL	SW-34 COL120130017 12/11/2000	SQL	MDL	SW-35 COL120130016 12/11/2000	SQL	MDL	SW-36 COL120130015 12/11/2000	SQL	MDL	SW-37 COL120130014 12/11/2000	SQL	MDL	SW-38 COL120130013 12/11/2000	SQL	MDL	SW-DUP-01-1 COL120130008 12/11/2000	SQL	MDL	SW-DUP-01-2 COL120130010 12/11/2000	SQL	MDL	SW-DUP-02-1 COL120130009 12/11/2000	SQL	MDL	SW-DUP-02-2 COL120130011 12/11/2000	SQL	MDL	BK-TRIB-01 COL140114021 12/13/2000	WATER SQL	MDL
Inorganics																																				
Aluminum	ug/L	141	12.7 B	n/a	n/a	n/a	n/a	163	12.7	171	12.7	167	12.7	166	12.7	164	12.7	n/a	n/a																	
Antimony	ug/L	10	1.4 U	n/a	n/a	n/a	n/a	10	1.4 U	10	1.4 U	1.5	1.4 B	10	1.4 U	1.8	1.4 B	n/a	n/a																	
Arsenic	ug/L	10	2.6 U	n/a	n/a	n/a	n/a	10	2.6 U	10	2.6 U	10	2.6 U	10	2.6 U	n/a	n/a																			
Barium	ug/L	38.8	0.41	n/a	n/a	n/a	n/a	38.9	0.41	37.4	0.41	38.4	0.41	38.6	0.41	38.3	0.41	n/a	n/a																	
Beryllium	ug/L	5	0.071 U	n/a	n/a	n/a	n/a	5	0.071 U	0.09	0.071	0.09	0.071	5	0.071 U	0.12	0.071	n/a	n/a																	
Cadmium	ug/L	5	0.49 U	n/a	n/a	n/a	n/a	5	0.49 U	5	0.49 U	5	0.49 U	5	0.49 U	n/a	n/a																			
Calcium	ug/L	28600	37.9	n/a	n/a	n/a	n/a	29600	37.9	27800	37.9	28300	37.9	29800	37.9	29300	37.9	n/a	n/a																	
Chromium	ug/L	1.5	1 B	n/a	n/a	n/a	n/a	1.4	1 B	1.8	1 B	1.5	1 B	2.8	1 B	1.6	1 B	n/a	n/a																	
Cobalt	ug/L	50	3.2 U	n/a	n/a	n/a	n/a	50	3.2 U	50	3.2 U	50	3.2 U	50	3.2 U	50	3.2 U	n/a	n/a																	
Copper	ug/L	2.9	2.2	n/a	n/a	n/a	n/a	25	2.2 U	2.2	2.2	25	2.2 U	2.5	2.2	2.2	2.2	n/a	n/a																	
Iron	ug/L	402	8.8 B	n/a	n/a	n/a	n/a	469	8.8	429	8.8	400	8.8 B	547	8.8	439	8.8	n/a	n/a																	
Lead	ug/L	3	1.9 U	n/a	n/a	n/a	n/a	3	1.9 U	3	1.9 U	3	1.9 U	3	1.9 U	2.4	1.9 B	n/a	n/a																	
Magnesium	ug/L	6830	19.9	n/a	n/a	n/a	n/a	7050	19.9	6620	19.9	6760	19.9	7000	19.9	6920	19.9	n/a	n/a																	
Manganese	ug/L	82.5	0.87	n/a	n/a	n/a	n/a	89.9	0.87	80.7	0.87	81.2	0.87	93.1	0.87	93.4	0.87	n/a	n/a																	
Mercury	ug/L	0.087	0.045	n/a	n/a	n/a	n/a	0.084	0.045	0.098	0.045 B	0.09	0.045 B	0.095	0.045 B	0.068	0.045 B	n/a	n/a																	
Nickel	ug/L	40	6.1 U	n/a	n/a	n/a	n/a	40	6.1 U	40	6.1 U	40	6.1 U	40	6.1 U	40	6.1 U	n/a	n/a																	
Potassium	ug/L	2820	496	n/a	n/a	n/a	n/a	2550	496	2540	496	2570	496	2700	496	2720	496	n/a	n/a																	
Selenium	ug/L	5	2.1 U	n/a	n/a	n/a	n/a	5	2.1 U	5	2.1 U	5	2.1 U	5	2.1 U	5	2.1 U	n/a	n/a																	
Silver	ug/L	5	0.94 U	n/a	n/a	n/a	n/a	5	0.94 U	5	0.94 U	5	0.94 U	5	0.94 U	5	0.94 U	n/a	n/a																	
Sodium	ug/L	19600	14.5	n/a	n/a	n/a	n/a	20300	14.5	18900	14.5	19200	14.5	20500	14.5	20100	14.5	n/a	n/a																	
Thallium	ug/L	10	3.9 U	n/a	n/a	n/a	n/a	10	3.9 U	10	3.9 U	10	3.9 U	10	3.9 U	10	3.9 U	n/a	n/a																	
Vanadium	ug/L	50	1.8 U	n/a	n/a	n/a	n/a	50	1.8 U	2.2	1.8	50	1.8 U	2.5	1.8	50	1.8	n/a	n/a																	
Zinc	ug/L	6.2	3.1	n/a	n/a	n/a	n/a	7.6	3.1	7.3	3.1	6.4	3.1	8.2	3.1	8.1	3.1	n/a	n/a																	
Cyanide, Total	ug/L	10	1 U	n/a	n/a	n/a	n/a	10	1 U	10	1 U	10	1 U	10	1 U	10	1 U	n/a	n/a																	

Table 3
Summary of Sediment Sample Waste Characterization Results

Material Handling and Waste Characterization
Koppers Inc. Coal Tar Plant
Follansbee, West Virginia

Location ID: Date Collected:	Units	SD-60 06/16/10	SD-103 06/15/10	SD-111A 06/16/10
SVOCs-TCLP				
1,4-Dichlorobenzene	mg/L	0.05 U	0.05 U	0.05 U
2,4,5-Trichlorophenol	mg/L	0.05 U	0.05 U	0.05 U
2,4,6-Trichlorophenol	mg/L	0.05 U	0.05 U	0.05 U
2,4-Dinitrotoluene	mg/L	0.05 U	0.05 U	0.05 U
Cresols (total)	mg/L	0.05 U	3	180
Hexachlorobenzene	mg/L	0.05 U	0.05 U	0.05 U
Hexachlorobutadiene	mg/L	0.05 U	0.05 U	0.05 U
Hexachloroethane	mg/L	0.05 U	0.05 U	0.05 U
Nitrobenzene	mg/L	0.05 U	0.05 U	0.98
Pentachlorophenol	mg/L	0.25 U	0.25 U	0.25 U
Pyridine	mg/L	0.1 U	0.1 U	0.65
VOCs-TCLP				
1,1-Dichloroethene	mg/L	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	mg/L	0.2 U	0.2 U	0.2 U
2-Butanone	mg/L	0.2 U	0.2 U	0.2 U
Benzene	mg/L	0.2 U	0.2 U	0.17 J
Carbon tetrachloride	mg/L	0.2 U	0.2 U	0.2 U
Chlorobenzene	mg/L	0.2 U	0.2 U	0.2 U
Chloroform	mg/L	0.2 U	0.2 U	0.2 U
Tetrachloroethene	mg/L	0.2 U	0.2 U	0.2 U
Trichloroethene	mg/L	0.2 U	0.2 U	0.2 U
Vinyl chloride	mg/L	0.2 U	0.2 U	0.2 U
Inorganics - TCLP				
Arsenic	mg/L	0.058 B	0.077 B	0.018 BJ
Barium	mg/L	0.66 B	0.42 B	0.32 B
Cadmium	mg/L	0.05 U	0.05 U	0.05 U
Chromium	mg/L	0.15	0.23	0.019 J
Lead	mg/L	0.015 J	0.037 J	0.08
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U
Selenium	mg/L	0.05 U	0.05 U	0.0062 BJ
Silver	mg/L	0.0025 J	0.0018 J	0.001 J
PCBs				
Aroclor 1016	ug/kg	40 U	31 U	28 U
Aroclor 1221	ug/kg	40 U	31 U	28 U
Aroclor 1232	ug/kg	40 U	31 U	28 U
Aroclor 1242	ug/kg	40 U	31 U	28 U
Aroclor 1248	ug/kg	1,600	1,600	28 U
Aroclor 1254	ug/kg	40 U	31 U	4,200
Aroclor 1260	ug/kg	620	1,100	28 U
Pesticides - TCLP				
Chlordane (technical)	mg/L	0.005 U	0.005 U	0.005 U
Endrin	mg/L	0.0005 U	0.0005 U	0.0005 U
Heptachlor	mg/L	0.0005 U	0.0005 U	0.0005 U
Heptachlor epoxide	mg/L	0.0005 U	0.0005 U	0.0005 U
Lindane	mg/L	0.0005 U	0.0005 U	0.0005 U
Methoxychlor	mg/L	0.001 U	0.001 U	0.001 U
Toxaphene	mg/L	0.02 U	0.02 U	0.02 U
Herbicides - TCLP				
2,4,5-TP (Silvex)	mg/L	0.01 U	0.01 U	0.01 U
2,4-D	mg/L	0.04 U	0.04 U	0.04 U
Waste Characterization				
Ignitability		NO	NO	NO
Total Extractable Organic Halogens				
Total Extractable Organic Halogens	mg/kg	482 U	378 U	342 U
Miscellaneous				
Total Cyanide	mg/kg	15.2	8.3	20.2
Reactive Cyanide	mg/kg	0.50 U	0.50 U	0.50 U
Percent Solids	%	41.5	53	58.5
pH		9.0	7.6	8.0
Total Sulfide	mg/kg	7,840	3,330	1,110
Reactive Sulfide	mg/kg	64	352	20 U

Notes:

J - Estimated Result. The result is less than the method reporting limit

U - Compound not detected above reported sample quantitation limit

B - Method blank contamination. The associated method blank contains the target analyte at a reportable level

Bold concentration indicates positive detection above method detection limit

ug/kg - micrograms per kilogram

mg/kg - milligrams per kilogram

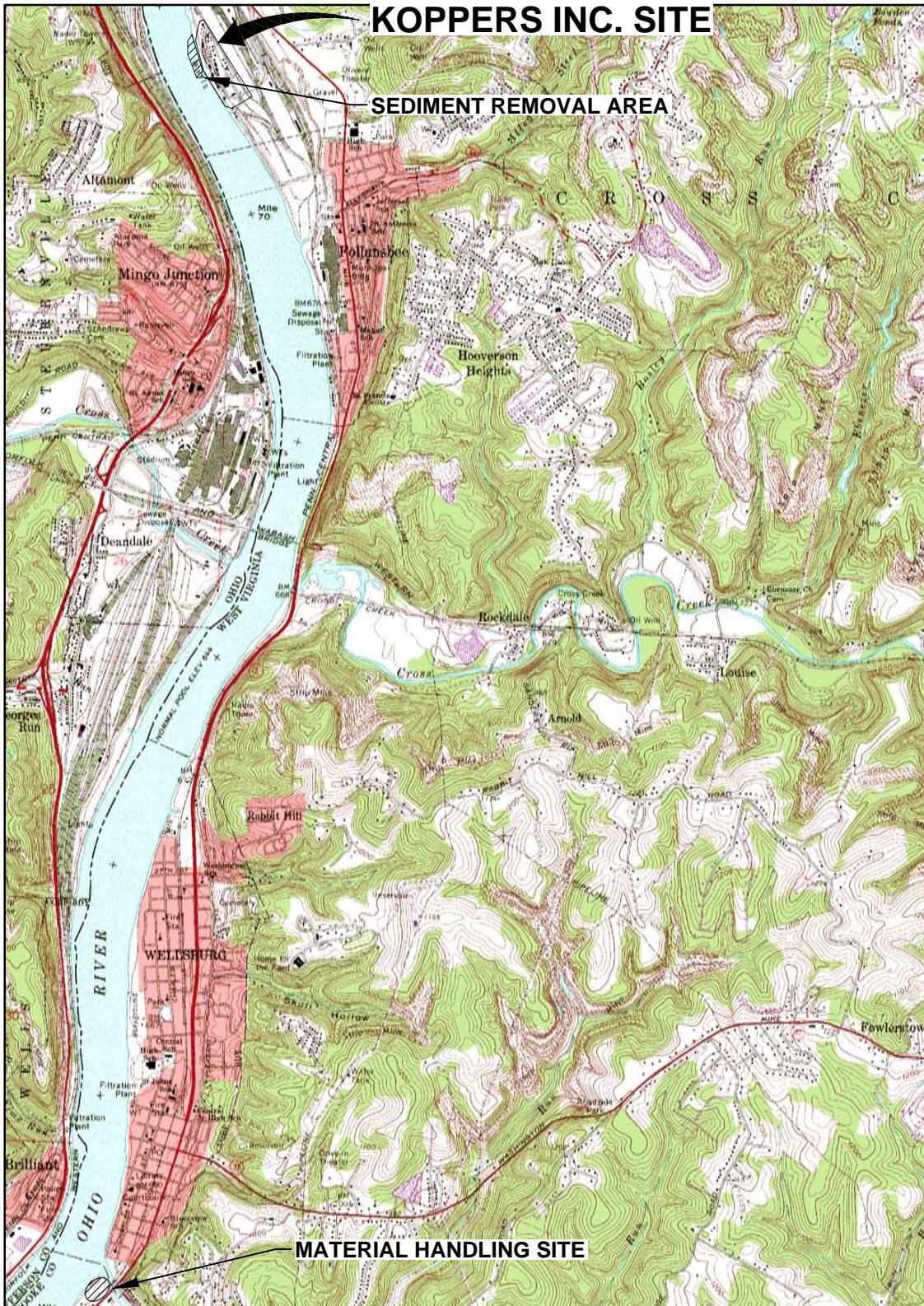
mg/L - milligrams per liter

SVOCs - semi-volatile organic compounds

VOCs - volatile organic compounds

TCLP - toxicity characteristic leaching procedure

PCBs - polychlorinated biphenyls



REFERENCE: BASE MAP SOURCE: USGS 7.5 MIN. TOPO. QUAD., STEUBENVILLE EAST, OHIO (1968, PHOTOREVISED 1978).

0 3,600' 7,200'

GRAPHIC SCALE

BEAZER EAST, INC.
KOPPERS INC. PLANT
FOLLANSBEE, WEST VIRGINIA

LOCATION MAP

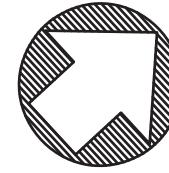
SITE COORDINATES:
LATITUDE: 40°20'21.04"
LONGITUDE: 80°36'26.86"



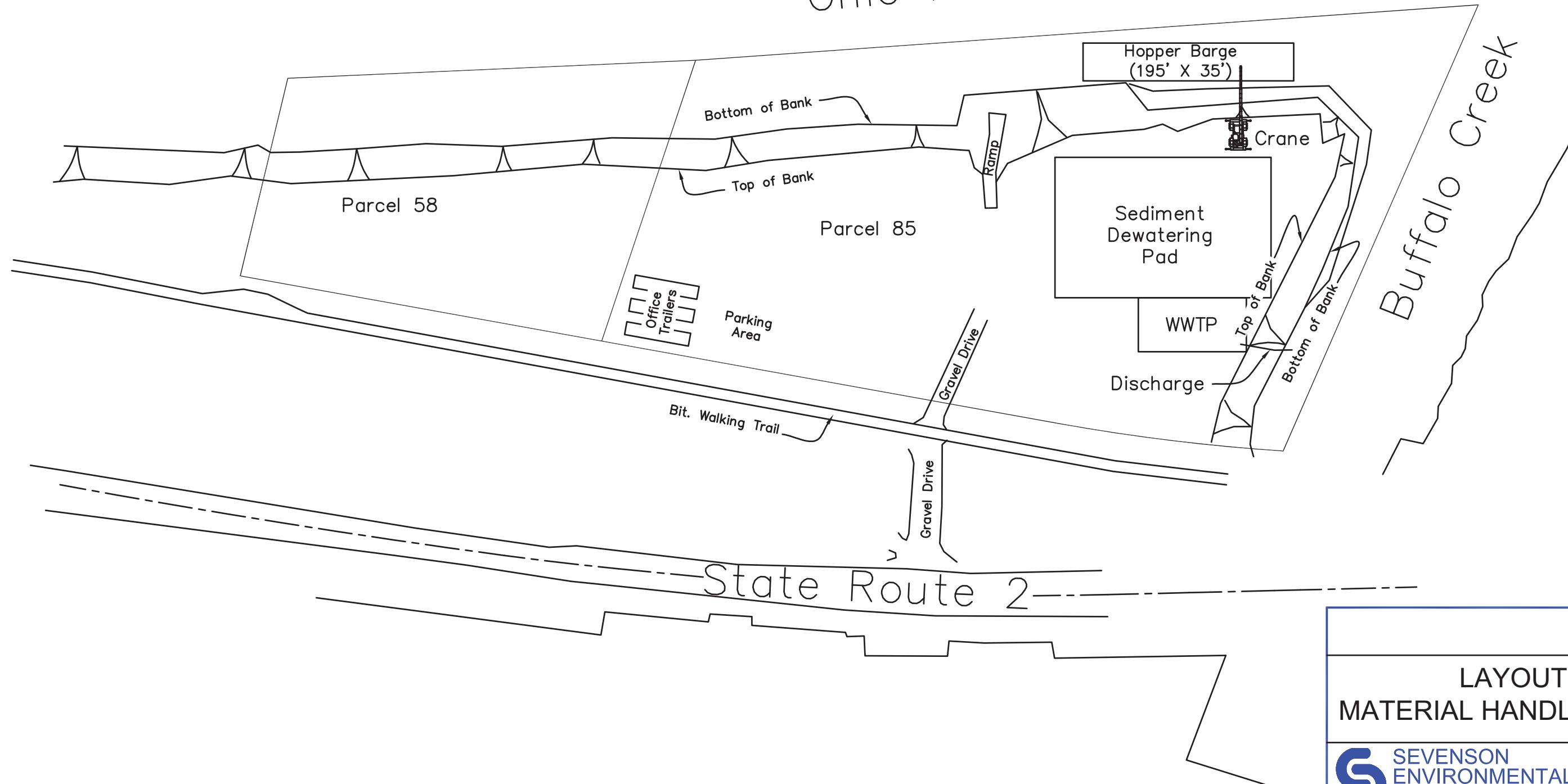
QUADRANGLE LOCATION

 ARCADIS

FIGURE
1



Ohio River



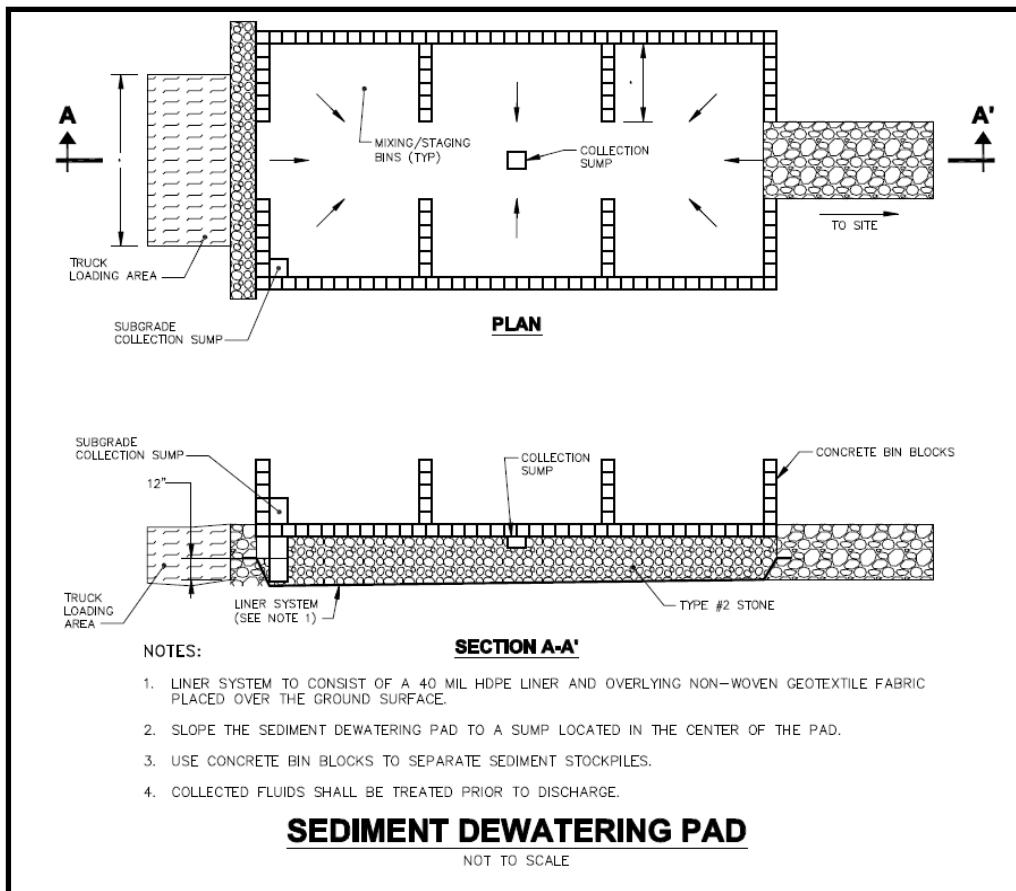
LAYOUT
MATERIAL HANDLING SITE

S SEVENSON
ENVIRONMENTAL
SERVICES, INC.

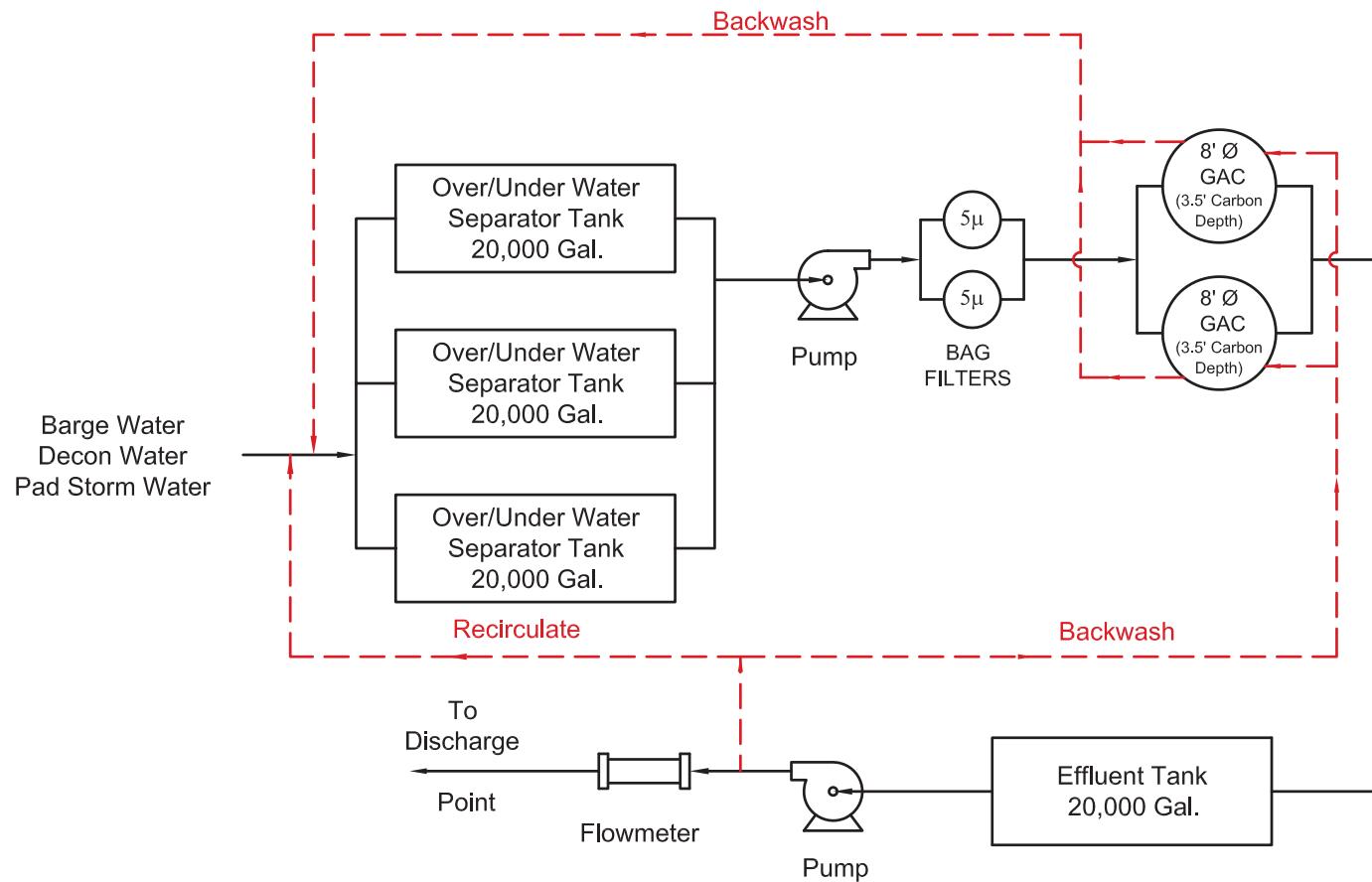
DRAWING
2

DATE:
DRAWN BY:
CHECKED BY:
CAD FILE:
SCALE:

FIGURE 3 – SEDIMENT DEWATERING PAD



Imagine the result



200 GPM WWTP
Process Flow Diagram

Beazer East, Inc.
Sediment Remediation Project
Follansbee, WV



Figure

4

DATE:	4/15/11
DRAWN BY:	C. Bigelow
CHECKED BY:	M. Crystal
CAD FILE:	wwtp-pfd
SCALE:	None